

ABSTRACT OF THE DISCLOSURE:

A method and apparatus for fast digital filtering that requires only filter stages of first and second order. A
5 desired rational filter transfer function is represented as a sum of first and second order intermediate transfer functions. A time dependent input signal is first fed in parallel into a plurality of first and second order intermediate recursive filter stages. Then, the outputs of
10 the intermediate filter stages are summed up to an output filter signal that corresponds to the desired rational filter transfer function. The method and apparatus reduces the amount of calculational effort to the order of $O(N)$, where N denotes the number of sampling points in the time domain,
15 because the digital filtering is based on a discrete recursive convolution in the time domain.